

13 MAY 1981

MEMORANDUM FOR: Director of Communications
Director of Data Processing

FROM: James H. McDonald
Director of Logistics

SUBJECT: Reliability of Utility Systems Supporting
Data Processing and Communications

Gail and Bruce:

1. In your meeting with the Associate Deputy Director for Administration on 8 May, you discussed the need for a consistent degree of reliability between our data processing systems and the utility and communications systems which support them. It would be meaningless, for example, for ODP to work towards a "no failure" mode of operation if we who provide the necessary support did not embrace a similar philosophy. In order to ensure that we are working towards a common reliability goal, it was proposed, and agreed to in principle, that we form a joint OC/ODP/OL group to examine the total reliability of these systems and make specific recommendations for any required improvements. The first and most immediate objective of the group would be to examine the Headquarters utility systems, but conceivably, this might in turn lead to an examination of similar issues in the areas of data processing and communications.

2. I believe the suggested approach would be a good one; and to that end, I will be nominating [redacted] Chief, Headquarters Engineering Branch, Real Estate and Construction Division, OL, to work on this project. If you still believe as strongly as I that this approach is worth pursuing, please provide [redacted] (Deputy Director of Logistics) with the name of an individual from each of your offices to serve with [redacted]. Upon receipt of these names, Dan will make arrangements to get the group together and have them develop an agenda and time schedule for our prior review and approval. Because the initial effort of the group will be directed towards an examination of the Headquarters utility systems, I could expect [redacted] to chair the group for this first effort.

3. I look forward to the implementation of this effort not only because of the contribution it can make to our ongoing efforts, but also because of its importance to efforts now being initiated for the construction of a new building at Headquarters.

/s/ James H. McDonald

James H. McDonald

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Distribution:

- 1 - each addressee
- 1 - C/RECD/OL
- 1 - C/LSD/OL
- 1 - C/BPS/OL
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- 1 - C/HEB/RECD/OL (Official)
- 1 - D/L Chrono
- 1 - OL Files
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DD/L [] (12 May 1981)

STAT

Headquarters Emergency Power

Background

Original Headquarters Building construction provided two manual start 2000 kW generators at the powerplant. After a commercial power failure, these units could be applied to clear the elevators and restore lighting. Air conditioning and electronic loads were not provided with power.

Automatic start generators were installed in early 1970 along with small air-conditioning units located in the main building. Critical loads such as communications, computer rooms, Operations Center, DCI, telephone systems, and the Security Duty Office were automated in this manner. The Office of Data Processing expansion in the mid-seventies required the addition of a second 2500 kW generator and Project SAFE required yet a third. All of this equipment has now been installed and the original two 2000 kW generators have now been automated. Associated with these projects were the installation of Uninterruptible Power Systems (UPS) to provide transient voltage fluctuation isolation, 15 minutes battery-powered coverage in event of commercial power failure, and/or frequency conversion as required.

Current Situation

We are presently still in a single 2500 kW generator automatic mode of operation. By repositioning our mode selector switches, we can attain an automatic four generator system of 9000 kW capacity almost immediately. The single generator is

severely overloaded and will certainly abort if faced with a power failure. The Uninterruptible Power Systems will provide continuity during the transition from commercial power to emergency power.

Future Situation

It is proposed to go to the four generator automatic mode immediately. Approximately ^{eight} ~~four~~ weeks after this, the original 2500 kW generator will have been reconnected to add a fifth machine capability to this automatic system for a total capacity of 11,500 kW.

A number of funded and planned projects impinge directly upon the power systems. Construction has just started on doubling the capacity of C-Vault for Project SAFE. A totally new vault is in planning for load growth in the south portion of the building. New chilled water and steam lines are being installed to the north end of the building as well as a new underground electrical duct bank. It is important to realize that we are constantly trying to maintain a dynamic posture that avoids having our utility systems capability outstripped by growth of customer load or reliability requirements.

#6 Oil 15¢/gal

#2 Oil \$1.10/gal

Commercial gas rate

49¢/therm

GSA labor rate ~~\$17.17~~

\$17.17/hour

incl. benefits

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Date
7/6/81 Outage - 3 minutes to switch to VECO
back-up
Cause: Malfunction of VECO switchgear
triggered by thunderstorm

7/7/81 Outage - 2 minutes to switch to VECO
back-up
Cause: Malfunction of new VECO
switchgear at substation

7/20/81 Outage: 2 minutes to restore with
VECO back-up
Cause: Thunderstorm

No outages in 1980

There were 10 glitches from 1 May 81 to 1 Sept 81
Estimate 3-5 more for balance of year

Work at ^{substation} (agency request) is presently underway
at sub station which is hoped will
reduce glitch count.

Glitch count has been relatively constant
over a period of 5 years